We claim:

1. In a reperfusion therapy method for treating acute myocardial infarction (AMI) in a mammal to reduce heart damage, the improvement comprising administering an effective amount of a composition comprising Granulocyte Colony Stimulating Factor (G-CSF) polypeptide before, concurrently with, and/or after reperfusion therapy.

2. The method of claim 1 wherein the reduction in damage is characterized by reduction in wall thickness losses.

3. The method of claim 1 wherein said reperfusion therapy consists of primary angioplasty and/or administration of a thrombolytic agent.

4. The method of claim 3 wherein said thrombolytic agent is selected from the group consisting of: streptokinase, urokinase, prourokinase, and tissue-type plasminogen activator.

5. The method of claim 1 wherein said composition includes the use of at least one additional factor selected from the group consisting of: EPO, SCF, M-GDF, GM-CSF, M-CSF, CSF-1, IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12, interleukins, IGF-1, LIF, interferon, a neurotrophic factor, a fibroblast growth factor, and human growth hormone.

6. The method of claim 1 wherein the amount of the G-CSF polypeptide administered is 300 μg per day.

7. The method of claim 1 wherein said mammal is a human.

8. A kit containing components for treating myocardial infarction comprised of:

a) a composition comprising G-CSF polypeptide; and

b) optionally, at least one additional factor selected from the group consisting of: EPO, SCF, M-GDF, GM-CSF, M-CSF, CSF-1, IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12, interleukins, IGF-1, LIF, interferon, a neurotrophic factor, a fibroblast growth factor, and human growth hormone.

9. In a reperfusion therapy method for treating total or near total occlusion in an artery in a mammal to reduce tissue damage, the improvement

comprising administering an effective amount of a composition comprising Granulocyte Colony Stimulating Factor (G-CSF) polypeptide before, concurrently with, and/or after reperfusion therapy.

10. In a bypass surgery method for treating total or near total occlusion in an artery in a mammal to reduce tissue damage, the improvement comprising administering an effective amount of a composition comprising Granulocyte Colony Stimulating Factor (G-CSF) polypeptide before, concurrently with, and/or after bypass surgery.